UNIVERSITY OF QUEENSLAND
COMPUTER CENTRE

COMPUTER

CENTRE

BULLETIN

EDITORIAL COMMENT

For those not on the mailing list, copies of the Computer Centre Bulletin are available in the foyer of the Computer Centre. The prime purpose of the Bulletin is to disseminate details of services provided by the Computer Centre and so keep clients informed on the latest status of all services. In particular, announcements of new facilities, changes in services offered, details of known errors and reports of corrected errors are published in the Bulletin. The Bulletin also publishes articles which are believed to be of practical value or special interest to clients and so assist them in making better use of the services of the Centre.

Any suggestions or criticisms concerning the Bulletin or the services at the Computer Centre are welcomed and should be addressed to

> The Editor,
> Computer Centre Bulletin,
> Computer Centre,
> University of Queensland,
> ST. LUCIA. Q. 4067

ORGANISATIONAL DISTINCTION BETWEEN THE DEPARTMENT OF COMPUTER SCIENCE AND THE COMPUTER CENTRE

The following statement has been issued by the Registrar, Dr. S.A. Rayner, to assist you in your dealings with these two sections of the University.

The functions of the two departments have been set out clearly to avoid inconvenience to people seeking information or using the facilities available.

When the Department of Computer Science was formed in January 1969, the Computer Centre was transferred from within the Department of Electrical Engineering to become part of the new Department.

During the first year of this new organization, it became increasingly clear that the academic and research functions of the Department were quite distinct from the service functions of the Computer Centre.

The problem of academic staff committed to the development of the Centre's services with practically no time for research, had become more acute with the installation of the new computer. As a result, the Professional Systems Development Group, a professional body concerned with the technical development of the Computer Centre, as distinct from an academic group with commitments to the Centre, was established.

In late 1969, it was approved that, in view of the clear distinction between the academic and service functions, the Department of Computer Science and the Computer Centre should become separate entities. Thus, the Department of Computer Science is now a conventional academic department contributing to the University's teaching and research programmes and competing for staff establishment, equipment, maintenance and travel grants, etc., on the same basis as other departments. The Department is charged normal departmental rates for computing services. The Computer Centre on the other hand is a service organization with professional staff (Systems Development Group) and operational staff who are responsible for day-to-day scheduling, machine maintenance, data preparation and operation of the computer.

Professor Rose is currently Head of the Department of Computer Science and, until such time as a Directorship is established, is Acting Director of the Computer Centre.

Courses - Computer Science

The Department of Computer Science, in conjunction with the Department of Accountancy, Economics and Mathematics, is responsible for teaching subjects within the post-graduate Diplomas of Automatic Computing and Information Processing.

The Department is also responsible for a number of programming lectures within other subjects, and would assume responsibility for future undergraduate subjects in Computer Science.

Courses - Computer Centre

The Computer Centre offers short, non-credit courses about four times per year specifically to introduce people to the Centre's facilities (currently, FORTRAN programming). These courses are given by Computer Centre personnel to persons from within and outside of the University. Also, Computer Centre staff are responsible for consultation on all aspects of the Centre's facilities.

Computing Enquiries

Enquiries with respect to computing services should be directed to the Computer Centre (telephone extensions are listed under Central Services, page 3 of the University's Directory).

Attention is drawn in particular to the last paragraph of the Registrar's statement as there has been a large increase in the number of queries received by Computer Science Departmental Staff concerning Computer Services. Because the Departmental Staff have no direct contact with Computer Operations, enquiries about the Services should be directed to members of the Operations Staff on Extension 8471.

Services enquiries are ones with respect to any of the following:

1. System Status
2. Accounting
3. Production Bookings
4. Consultation Bookings
5. Data Preparation
6. Progress of any work submitted
7. Any other queries concerning Computer Services

Your co-operation will result in a faster and more efficient service.

USE OF CARD PUNCHES

There are four card punches located in the Clients' Room at the Centre. However, two of the punches do not belong to the Computer Centre. They belong to the Department of Computer Science and are located in the Clients' room only because of the lack of alternative accommodation. They are provided solely for the use of the Department's post-graduate students and staff and are clearly labelled accordingly.

The demand for use of the remaining two punches necessitates users compliance with the regulation that usage be restricted to five minutes while others are waiting to use the punch. It is an embarrassing situation when, due to abuse of this regulation, someone must be asked to leave the machine.

The Centre requests clients using the keypunches to keep the clients' room tidy. Often, many used cards are strewn about the room rather than deposited in the waste bins provided. Compliance with this request will assist in maintaining some order and cleanliness in a room which is visited by hundreds of people daily.

STAFF OF THE COMPUTER CENTRE

This month we welcome *Miss Arlene Formigoni* as Clerk-Typist for the Computer Centre. Before joining the Computer Centre Arlene worked in several sections of Administration.

LIBRARY ACCESSIONS

This section lists the books on Computer Science that were acquired by the Libraries of the University of Queensland in April 1970.

Ghosal, A.
Elements of operational research. 1969. (001.424 GHO. Main)

Parslow, R.D. (and others)
Computer graphics. 1969. (001.53 PAR. Engin.)

Scott, Allen J.
A bibliography on combinatorial programming methods and their application in regional science and planning. 1969. (016.51992.SCO. Arch.)

Annals of mathematical Logic. v.1; 1970, and onwards. (164.ANN. P.S.)

U.S. National Bureau of Standards. Federal information processing standards publication. 1968, and onwards. (389.6 UNI. Engin.)

Baumslag, Benjamin.
Shcaum's outline of theory and problems of group theory. 1968. (Qto 512.86 BAU. Math.)

Jennings, Walter.
First course in numerical methods. 1964. (512.8 JEN. Engin.)

Price, Wilson T.
Elements of data processing mathematics. 1967. (512 PRI. Engin.)

Weik, Martin H.
A third survey of domestic electronic digital computing systems. 1961. (510.7834 WEI. Engin.)

Journal of computational physics. v.4; 1969, and onwards. (530.15 JOU. Maths.)

Dickson, Thomas R.
The computer and chemistry. 1968. (540.018 DIC. Chem.)

Circuit theory Colloquium on Filter & Integrated circuit design, University of New South Wales, 1969. Abstracts. 1969. (Qto 621.3815 CIR. Engin.)

Ginzburg, Abraham.
Algebraic theory of automata. 1968. (629.89 GIN. Math.)

University of Strathclyde
Dept. of civil engineering, Computer applications in Civil engineering. 196-. (Qto 624 UNI. Engin.)

Chorafas, Dimitris N.
How to manage computers for results. 1969. (658.7 CHO. Main.)

Daniels, Alan.
Basic training in systems analysis. 1969. (651.8 DAN. Main.)

Davison, R.B.	*A guide to the computer.* 1968. (651.8 DAV. Vet.)
Gregory, Robert Henry.	*Automatic dataprocessing.* 1963. (651.8 GRE. T.M.L.)
Hassitt, Anthony.	*Computer programming and computer systems.* 1967. (651.8 HAS. Engin.)
Mumford, Enid.	*Computers: planning for people.* 1968. (658 MUM. Engin.)
Nolan, Richard L.	*Introduction to computing through the basic language.* 1969. (651.8 NOL. Engin.)
Parton, Kenneth Charles.	*The digital computer.* 1964. (658.505 PAR. Engin.)
Rice, John K.	*Introduction to computer science.* 1969. (651.8 RIC. Engin.)
White, Douglas John.	*Operational research techniques.* 1969-. (658.502 WHI. Math.)

SEMINARS IN COMPUTER SCIENCE

As mentioned in the last edition of the Bulletin, three seminars are being sponsored by the Department of Computer Science in second term. The second and third seminars will be held this month in:

Room G13, Engineering Administration Building

Commencing at 2.00 p.m. and finishing no later than 4.00 p.m.

The second seminar for the term will be held on:

WEDNESDAY, 8TH JULY, 1970.

The speaker will be Mr. M.J. McLean, Senior Demonstrator in the Department of Computer Science, who will discuss *Features of Atlas - Hardware and Supervisor*. The following abstract outlines the theme of the seminar.

The Atlas computer and its supervisor were pioneers in the field of large, fully automatic computer systems and many of the techniques that were developed have been incorporated in modern batch processing systems.

This seminar discusses the main features of the Atlas hardware and outlines the structure of the Supervisor which enables this second generation machine to achieve an average of 900 jobs per day.

The third seminar for the term will be held on:

WEDNESDAY, 29TH JULY, 1970.

The speaker will be Mr. J.D. Noad, Senior Systems Analyst in the Computer Centre, who will discuss *The PDP10 Accounting System.*

The following abstract outlines the theme of the seminar.

Accounting for the usage of a Computer System which processes in batch mode only is a fairly simple task, as each job is completed before the next can commence. In a time-sharing system however, many jobs can be running simultaneously in the Computer.

This seminar will discuss several aspects of accounting for Computer System usage in time-sharing mode and outline the PDP10 Accounting System as an example of these principles.

NOTES ON FORTRAN IV

1. On the PDP 10 a real statement involving exponentiation of an integer expression is evaluated in real mode throughout.

example:

$$A = X**(I1 - I2 + I3)$$

The integer expression (I1 - I2 + I3) is not evaluated in integer mode. Rather, the whole expression is evaluated completely in real mode, including a real-real exponentiation. If this effect is not what is desired, then the integer expression must be calculated separately.
viz.

$$II = (I1 - I2 + I3)$$

$$A = X**II$$

2. Users should note the difference between the PDP 10 and the GE 225 when truncating real numbers. On both machines, positive real numbers are truncated to the lowest integer. However, with negative real numbers, the PDP 10 continues to truncate to the lowest integer, while the GE 225 will truncate towards zero.

examples:

Number	PDP 10	GE 225
+1.5	+1	+1
+∅.5	∅	∅
-∅.5	-1	∅
-1.5	-2	-1

BULLETIN BAFFLER

We must apologize to readers for an error in last month's Bulletin Baffler.
The line
$$\textit{begin if } n > 0 \textit{ then } P(n-1, L2, L3); L3; \textit{ go to } L1; \textit{ end};$$
was incorrect and should have been
$$\textit{begin if } n > 0 \textit{ then } P(n-1, L2, L3); L3: \textit{ go to } L1; \textit{ end};$$

This error meant that the compiler would not have recognized L3 as a label
but as a procedure call. Compilation would then have been terminated with an
error message that L3 was a non-existent procedure.

Here is the solution to last month's Baffler.

For any positive integer argument n, procedure P is called recursively until
a call occurs where n = 0

When this happens statement 'L3' is executed and control goes to the label
specified as the middle argument in the last call on this procedure (i.e. in
the call when n = 1)

This label is the same as the one specified as the last argument in the
last-but-one call on the procedure. This is the statement 'L3' in the call
when n = 2.

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Similarly this statement is a jump to statement 'L3' in the call when n = 4.
This process continues until control arrives at statement 'L3' of the call
when n = 10. Finally control goes to A and a 1 is output.

N.B. If the first call had specified an odd value for n then a 2 would have
been output.

This is the final Baffler:-

Write an Algol procedure which will exchange the values of any two workspaces.

Test your procedure by exchanging the values of a[i] and i
                                      and then   i   and a[i].